

6061 TV 0.500 0.058w

Work Order ID 123941

123941

September-02-14 3:11:11 PM

Page 1

Item ID: D4202-1 Accept ***N1900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Spacer
 Start Date: 9/02/14 Start Qty: 400.00 ***400*** Cust Item ID:
 Required Date: 9/02/14 Req'd Qty: 400.00 ***400*** 184 Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 14-09-02 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start ***NR1***
 Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4202	C								

100 Hardinge CNC LATHE SMALL 0.00

100

Hardinge
Hardinge CNC Lathe Small

Memo

1- Machine as per Folio FB015
 FOLIO REV: ✓
 DWG REV: C

DO NOT CHAMFER OUTSIDE DIA

2- Deburr

184 ϕ JFC 2014-09-03

110 QC2- Inspect parts off machine FAI/FAIB 0.00

110

QC
Quality Control

Memo

184 ϕ JFC 2014-09-03

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 123941

September-02-14 3:11:11 PM

123941

Page 3

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Revision ID: Stop ***NS2***
Item Name: Spacer
Start Date: 9/02/14 Start Qty: 400.00 ***400*** Cust Item ID:
Required Date: 9/02/14 Req'd Qty: 400.00 ***400*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC6- Inspect dimensions to drawing	0.00							
150									
QC	Memo	0.00							DAS 38 9-8c 14-9-25
Quality Control									
190	Identify as per dwg & Stock Location <i>46</i>	0.00							
190									
Packaging	Memo	0.00							
Packaging	***STOCK IN SKIDTUBE CELL***								
200	QC21- Final Inspection - Work Order Release	0.00							
200									
QC	Memo	0.00							
Quality Control									

184
14-9-25
184

MLJ 14-09-26

MLJ 14-09-26

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

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Picklist Print

September-02-14 3:11:14 PM

Page 1

Work Order ID: 123941

123941

Parent Item: D4202-1

D4202-1

Parent Item Name: Spacer

Start Date: 9/02/14

Required Date: 9/02/14

Start Qty: 400.00

Required Qty: 400.00

Comments: IPP REV:A NEW ISSUE 10-12-07 JLM VERIFIED:DD IPP
REV:B AS PER REV B 11-04-05 JLM VERIFIED BY:DD IPP Rev:C
11.12.19 PER DWG REV.C DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6T0.500W.058		Purchased	No			100	f	64.0000	0.35	148			

M6061T6T0 500W 058

**

6061-T6 RD Tube .500 x.058W

Location

Loc Qty

Loc Code

MAT014

64

117890

4

m129188

60

m128495

60

8.833

JFL 2014-09-03

DQA: _____ Date: _____

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Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
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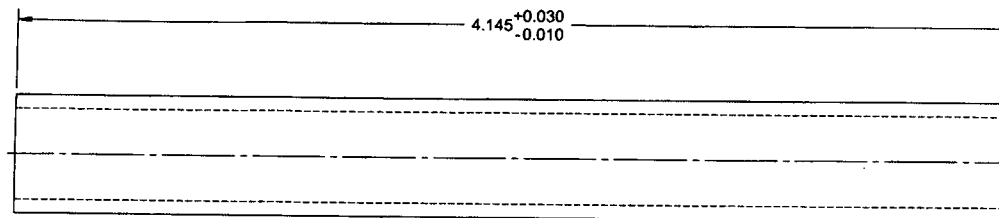
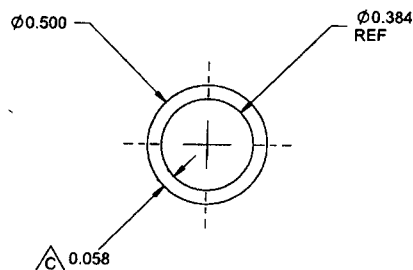
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FAULT CATEGORY

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SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 173941 MJS
14 09-02



D4202-1 SPACER

RELEASED
2011-12-14
MT

- NOTES:**
- 1) MATERIAL: 6061-T4/-T42 ALUMINUM TUBING PER WW-T-700/6, AMS 4081, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T4T0.500W.058
OR
6061-T6/-T62 ALUMINUM TUBING PER WW-T-700/6, QQ-A-200/8, QQ-A-225/8, AMS 4080 / 4082, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T6T0.500W.58
HEAT TREAT TO -T4/-T42 CONDITION. MIN UTS = 30 KSI (60 HREW MIN)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.03 lbs

C	6061-T4 WAS 6061-T6, 0.058 WAS 0.049	CP	11.12.13
B	0.049 WAS 0.058. REASON: FACILITATE MFG	MB	11.03.22
A	NEW ISSUE	CP	10.09.22
REV.	DESCRIPTION	BY	DATE
DESIGN	JP		
DRAWN	JP		
CHECKED	ASS		
MFG. APPR.	EF		
APPROVED	JP		
DE APPR.	JP		
DATE	11.12.13		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D4202	REV. C
TITLE SPACER	SCALE NTS
COPYRIGHT © 2010 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

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<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO25734

Purchase Order Date 9/11/2014

PO Print Date 9/15/2014

Page Number 1 of 2

Order From :

VC-MET004

Ship To : DART AEROSPACE LTD

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

PAID
REVISED \$

Contact Name

Vendor Phone 450 473 1884

Ship To Contact

Ship To Phone

Ship Via: FedEx Overnight collect

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	123941	D4202-1 SPACER	9/26/2014 Yes 9/26/2014		184.00	\$3.65	\$671.00
	HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C REQUIRED PART ARE MADE FROM 6061-T6 MATERIAL						
						Line Total:	\$671.00
2	71401-45	PROCUREMENT QUALITY CLAUSES	9/26/2014 No 9/26/2014		1.00	\$0.00	\$0.00
	Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A020 non-destructive test/inspection identification A021 dart aerospace processing A024 process certifications A026 certification of material conformance						

Note:

9/15/2014

METCOR INC.

560 BOUL ARTHUR SAUVE
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
198763	1	84644

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
25734		AL-6061	2014/9/12	FEDEX

QUANTITÉ Quantity	No. PIÈCE Part No.	NOM DE LA PIÈCE Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
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184 D4202-1

(184) D4202-1

SPACER

123941

1 BOITE DE CARTON

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	1	

CERTIFICAT

EMPAQUETAGE Packing

QUANTITÉ EXPÉDIÉE / Quantity Shipped 184

POIDS EXPÉDIÉ / Weight Shipped 5.94

QUANTITÉ RESTANTE / Quantity Remaining 0

POIDS RESTANT / Weight Remaining 0.00

CERTIFICAT

QUANTITÉ EXPÉDIÉE / Quantity Shipped 184

POIDS EXPÉDIÉ / Weight Shipped 5.94

Signature:

Date:

EXPÉDIÉ LE / Shipped On: 2014/09/22

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Rapport d'Inspection**Inspection Report**

BON DE TRAVAIL order	CHARGEMENT load
198763	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
25734		AL-6061		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL ANNEAL

SINGLE AGING TO CONDITION T42

□

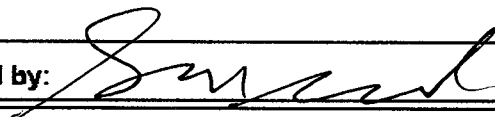

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	38 - 44 %IACS	36	38 - 39 %IACS
HARDNESS		36	67.5 - 70.5 HREW
			DURETEE MESUREE EN HR15TW = 66.5-68 HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
184	5.94	D4202-1 (184) D4202-1 SPACER 123941 1 BOITE DE CARTON

23 Shts

COMMENTAIRES / comments

APPROUVÉ par / Approved by:

DATE: 2014-09-22

APPROUVE par le Directeur

DATE 2017-08-25

COMPLAINTES / COMPLAINTS

BOULEVARD DE LA PAIX

15000

BOULEVARD

15000

15000

BOULEVARD

BOULEVARD

BOULEVARD DE LA PAIX

BOULEVARD

BOULEVARD DE LA PAIX 15000

BOULEVARD

BOULEVARD

BOULEVARD DE LA PAIX

BOULEVARD DE LA PAIX

BOULEVARD DE LA PAIX

BOULEVARD

BOULEVARD DE LA PAIX

BOULEVARD DE LA PAIX 15000

BOULEVARD

BOULEVARD DE LA PAIX

BOULEVARD

BOULEVARD DE LA PAIX

SPECIFICATIONS DU PROCEDE

BOULEVARD	BOULEVARD	BOULEVARD	BOULEVARD	BOULEVARD
BOULEVARD DE LA PAIX	BOULEVARD DE LA PAIX	BOULEVARD DE LA PAIX	BOULEVARD DE LA PAIX	BOULEVARD DE LA PAIX

BOULEVARD

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BOULEVARD	BOULEVARD
BOULEVARD DE LA PAIX	BOULEVARD DE LA PAIX

BOULEVARD DE LA PAIX

BOULEVARD DE LA PAIX

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
198763	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
25734		AL-6061		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL ANNEAL

SINGLE AGING TO CONDITION T42

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	36 - 44 %IACS	36	38 - 39 %IACS
HARDNESS		36	67.5 - 70.5 HREW
			DURETEE MESUREE EN HR15TW = 66.5-68 HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
184	5.94	D4202-1 (184) D4202-1 SPACER 123941 1 BOITE DE CARTON

COMMENTAIRES / comments

SOL ANNEAL 529C, 35MIN
AGE HARDEN AMBIANT, 96HRS

Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

Vincent Constant



SEP 22 2014